**AMENDMENTS TO CLAIMS**

**Listing of claims:**

1-102. (Canceled)

103. (New) A method of predicting metastatic melanoma survival comprising:

providing a blood, serum or plasma sample containing acellular DNA from a human subject suffering from metastatic melanoma;

comparing DNA markers selected from the group consisting of D12S1657, D12S393, D12S1706, and D12S346 in the acellular DNA with the same DNA markers in a control DNA;

determining from the comparison step if the acellular DNA has a loss of heterozygosity at one or more of the DNA markers; and

predicting that the subject having a loss of heterozygosity at one or more of the DNA markers has a lower probability of survival.

104. (New) The method of claim 103, wherein the acellular and control DNA are amplified.

105. (New) The method of claim 103, wherein the control DNA is obtained from non-neoplastic tissue from the subject.

106. (New) The method of claim 103, wherein the control DNA is obtained from a biological fluid or tissue from a normal subject.

107. (New) The method of claim 103, wherein the control DNA is obtained from peripheral blood lymphocytes from the subject.

108. (New) The method of claim 103, wherein the loss of heterozygosity comprises a 40% or more reduction of peak intensity for the acellular DNA marker as compared to the

corresponding control DNA marker.

109. (New) A method of metastatic melanoma prognosis comprising:

providing a blood, serum or plasma sample containing acellular DNA from a human subject suffering from metastatic melanoma;

comparing DNA markers selected from the group consisting of D12S1657, D12S393, D12S1706, and D12S346 in the acellular DNA with the same DNA markers in a control DNA;

determining from the comparison step if the acellular DNA has a loss of heterozygosity at one or more of the DNA markers; and

predicting that the subject having a loss of heterozygosity at one or more of the DNA markers has a poor prognosis.

110. (New) The method of claim 109, wherein the acellular and control DNA are amplified.

111. (New) The method of claim 109, wherein the control DNA is obtained from non-neoplastic tissue from the subject.

112. (New) The method of claim 109, wherein the control DNA is obtained from a biological fluid or tissue from a normal subject.

113. (New) The method of claim 109, wherein the control DNA is obtained from peripheral blood lymphocytes from the subject.

114. (New) The method of claim 109, wherein the loss of heterozygosity comprises a 40% or more reduction of peak intensity for the acellular DNA marker as compared to the corresponding control DNA marker.

115. (New) A method of predicting efficacy of melanoma cancer therapy comprising:

providing a blood, serum or plasma sample containing acellular DNA from a human subject suffering from Stage IV melanoma prior to administration of a cancer therapy;

comparing DNA markers selected from the group consisting of D12S1657, D12S393, D12S1706, and D12S346 in the acellular DNA with the same DNA markers in a control DNA;

determining from the comparison step if the acellular DNA has a loss of heterozygosity at one or more of the DNA markers; and

predicting that the cancer therapy efficacy of the subject having a loss of heterozygosity one or more of the DNA markers will likely be poor.

116. (New) The method of claim 115, wherein the cancer therapy is selected from the group consisting of chemotherapy, radiation therapy, gene therapy, immunotherapy, surgical procedure, and a combination of the cancer therapies.

117. (New) The method of claim 115, wherein the cancer therapy is biochemotherapy.

118. (New) The method of claim 117, wherein the cancer therapy is biochemotherapy and is a combination selected from the group consisting of dacarbazine, cisplatin, vinblastin, interferon alpha-2b, IL-2, and tamoxifen.

119. (New) The method of claim 115, wherein the acellular and control DNA are amplified.

120. (New) The method of claim 115, wherein the control DNA is obtained from non-neoplastic tissue from the subject.

121. (New) The method of claim 115, wherein the control DNA is obtained from a biological fluid or tissue from a normal subject.

122. (New) The method of claim 115, wherein the control DNA is obtained from peripheral blood lymphocytes from the subject.

123. (New) The method of claim 115, wherein the loss of heterozygosity comprises a 40% or more reduction of peak intensity for the acellular DNA marker as compared to the corresponding control DNA marker.

124. (New) A method of predicting responsiveness to cancer therapy comprising:

providing a blood, serum or plasma sample containing acellular DNA from a human subject suffering from Stage IV melanoma prior to administration of a cancer therapy;

comparing DNA markers selected from the group consisting of D12S1657, D12S393, D12S1706, and D12S346 in the acellular DNA with the same DNA markers in a control DNA,

determining from the comparison step if the acellular DNA has a loss of heterozygosity at one or more of the DNA markers; and

predicting that the subject having a loss of heterozygosity at one or more of the DNA markers has a poor likelihood of responding to cancer therapy.

125. (New) The method of claim 124, wherein the cancer therapy is selected from the group consisting of chemotherapy, radiation therapy, gene therapy, immunotherapy, surgical procedure, and a combination of the cancer therapies.

126. (New) The method of claim 124, wherein the cancer therapy is biochemotherapy.

127. (New) The method of claim 126, wherein the cancer therapy is biochemotherapy and is a combination selected from the group consisting of dacarbazine, cisplatin, vinblastin, interferon alpha-2b, IL-2, and tamoxifen.

128. (New) The method of claim 124, wherein the acellular and control DNA are amplified.

129. (New) The method of claim 124, wherein the control DNA is obtained from non-neoplastic tissue from the subject.

130. (New) The method of claim 124, wherein the control DNA is obtained from a biological fluid or tissue from a normal subject.

131. (New) The method of claim 124, wherein the control DNA is obtained from peripheral blood lymphocytes from the subject.

132. (New) The method of claim 124, wherein the loss of heterozygosity comprises a 40% or more reduction of peak intensity for the acellular DNA marker as compared to the corresponding control DNA marker.